### **Evidence for Semantic Identity under Ellipsis from Malagasy Sluicing\***

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### 1 Introduction

It is widely recognized that linguistic material cannot be freely unpronounced in a sentence; rather, missing material must be licensed by recoverability. Informally, if a constituent E can be elided, its meaning must be recoverable from an antecedent A. There is much debate however over the exact formulation of this identification condition and what information in A is relevant for recoverability. Under a *syntactic isomorphism* approach (Fiengo and May 1994 and others), there must be morphosyntactic identity between the elided constituent E and the antecedent A. Under a *semantic isomorphism* approach, there must be a particular semantic relation between the elided constituent E and the antecedent A (Dalrymple, Shieber, and Pereira 1991, Hardt 1999, Merchant 2001 and others). Much of this debate has revolved around subtle facts about English VP ellipsis (Hankamer and Sag 1976, Sag 1980, Zagona 1988, Lobeck 1995, Fiengo and May 1994, and others). In an important recent study, Merchant (2001) turns to the domain of sluicing (IP ellipsis) to argue in favor of semantic isomorphism.

The goal of this paper is to present an argument in favor of semantic isomorphism and against syntactic isomorphism from sluicing in Malagasy, an Austronesian language spoken on the island of Madagascar. Language-particular restrictions in Malagasy grammar greatly restrict the possible derivations for sluicing examples. When a syntactic isomorphism requirement is placed on ellipsis, it is predicted that sluicing should be unavailable, contrary to fact. The paper is structured as follow: Section 2 presents relevant facts about Malagasy syntax and the sluicing construction. Section 3 presents the argument for semantic isomorphism. Section 4 considers an alternative analysis that attempts to maintain syntactic isomorphism and shows that it is untenable. Section 5 concludes.

<sup>\*</sup> I would like to thank Tina Boltz and Landy Rahelison for the language consultations. I am grateful to Jason Merchant, Maria Polinsky, and the audience at NELS33 for valuable feedback and discussion.

# 2 Malagasy Syntax and Sluicing

# 2.1 Basic Clause Structure

Malagasy is an Austronesian language with approximately fourteen million speakers on the island of Madagascar. Its basic word order is VOS, (1).<sup>1</sup> Following Guilfoyle, Hung, and Travis 1992, I adopt the structure for VOS in (1b) with the clause-final subject occupying a right specifier of IP. The verb-initial order is compatible with verb raising,  $V^{\circ}$ -to-I° head movement, which that work also assumes.<sup>2</sup>

(1) a. m-i-vidy ny akoho i Bao PRESENT-ACT-buy the chicken Bao 'Bao is buying the chicken.'



Malagasy has a well-known voice system which advances thematically diverse elements to subject position. Corresponding to the active sentence in (2a), the PASSIVE sentence in (2b) has the direct object as the subject and the CIRCUMSTANTIAL sentence in (2c) has an oblique element as its subject.

(2)	a.	n-i-vidy r	ıy akoh	o ho an' i Soa i I	Bao ACTIVE				
		PAST-ACT(IVE)-buy t	he chicl	ken for Soa Ba	ao				
		'Bao bought the chicl							
	b.	no-vidi-n'	i Bao	ho an' i Soa ny ak	coho PASSIVE				
		PAST-buy-PASS(IVE)	Bao	for Soa the ch	nicken				
		'The chicken was bought for Soa by Bao.'							
	c.	n-i-vidi-anan'	i Bao	ny akoho i Soa	CIRCUMSTANTIAL				
		PAST-ACT-buy-CIRC	Bao	the chicken Soa					
		'Soa was bought a ch							

Again following Guilfoyle, Hung, and Travis 1992, I assume for such non-active sentences the structure in (3b) in which the subject has raised to the right specifier of IP,

<sup>&</sup>lt;sup>1</sup> I use the following abbreviations in glossing: 1/2/3-person, ACC-accusative, ACT-active voice, CIRC-circumstantial voice, NEG-negative, NOM-nominative, PASS-passive voice, SG/PL-number.

<sup>&</sup>lt;sup>2</sup> See MacLaughlin 1995, Pensalfini 1995, and Pearson 2001 for alternative clause structures for Malagasy.

there is V $^{\circ}$ -to-I $^{\circ}$ , and the immediately post-verbal agent is in the VP-internal subject position.

(3) a. no-vidi-n' i Bao ny akoho PAST-buy-PASS Bao the chicken 'The chicken was bought by Bao'



# 2.2 Two Syntactic Restrictions

There are two restrictions in Malagasy syntax that will be important for the discussion to follow. The first is that Malagasy subjects, both derived and underived, must be specific (Keenan 1976:252-254, Paul 2000b, Pearson 1996, 2001:19-20):

(4) *Malagasy subject specificity requirement* subjects must be specific

As Pearson 2001:19 states, the subject must be associated with an existential presupposition; there must be an object to which the subject refers. The subject may be a proper name, definite pronoun, or common noun with a demonstrative or definite article, but not a bare noun phrase, (5). Instead, an existential construction must be used with the latter, (6).

- (5) mamaky boky i Bao/izy/ny zaza/ilay zaza/\*olona/\*zaza read.ACT book Bao/3SG/the child/that child/person/child 'Bao/(s)he/the child/that child is reading a book' ('Someone/A child is reading a book')
- (6) misy olona/zaza mamaky boky exist.ACT person/child read.ACT book 'There is someone/a child reading a book'

Malagasy is perhaps even better known for the second syntactic restriction, that only subjects undergo Abar-movement (see, for example, Keenan 1972, 1976, 1995, Keenan and Comrie 1977, MacLaughlin 1995, Paul 2000a, 2002, Pearson 2001:35, Sabel 2002, and others). Only subjects can be targeted in grammatical rules that are typically

analyzed using Abar-movement: relativization, focus constructions, wh-question formation, topicalization, etc.<sup>3</sup>

(7) *Malagasy subject extraction restriction* only subjects undergo Abar-movement

I illustrate this restriction with the wh-questions in (8) and (9). Wh-questions in Malagasy are formed by fronting the wh-phrase and following it by the particle no, which I gloss FOCUS.<sup>4</sup> (8) contains grammatical wh-questions in which the wh-phrases correspond to a subject. (9) shows ungrammatical examples in which one attempts to wh-question a non-subject.

- (8) a. nividy ny akoho iza no t<sub>who</sub>? buy.ACT the chicken who FOCUS 'Who bought the chicken?' i Bao t<sub>what</sub>? b. inona no novidin' buy.PASS Bao what FOCUS 'What was bought by Bao?'
- (9) a. \*inona no nividy t<sub>what</sub> i Bao? what FOCUS buy.ACT Bao ('What did Bao buy?')
  - b. \*iza no novidina  $t_{who}$  ny akoho? who FOCUS buy.PASS the chicken ('Who was the chicken bought by?')

Unsurprisingly, the same subject extraction restriction holds in embedded wh-questions, which are formed in the same way. Embedded wh-questions are obligatorily preceded by the formative *hoe* and are extraposed yielding VSO word order in the matrix clauses.<sup>5</sup>:

(i) Rabe no nividy ny akoho Rabe FOCUS buy.ACT the chicken 'It's Rabe who bought the chicken'

<sup>&</sup>lt;sup>3</sup> Some adjuncts can undergo Abar-movement without first advancing to subject position (Keenan 1976, Rabenilaina 1998, Paul 2000a, 2001, 2002, Pearson 2001, Sabel 2002). Such examples will not be of concern here.

 $<sup>^4</sup>$  This particle also appears in the focus construction, (i), which is also governed by the subject extraction restriction.

<sup>&</sup>lt;sup>5</sup> The exact status of this morpheme is unclear and I gloss it as HOE. *Hoe* has two uses that I am aware of. Hollanger 1973 indicates that it is used before quotations and Paul and Rabaovololona 1998 reports that in raising-to-object contexts it sometimes replaces the complementizer *ho* in the haplological sequence ho[COMP] h(o)[future]-.

(10) a. nanontany aho hoe iza no nividv nv akoho who FOCUS buy.ACT the chicken ask.ACT **1SG.NOM HOE** 'I asked who bought the chicken' b. tsy fantatr'i Rasoa hoe inona no novidin' i Bao NEG know Rasoa HOE what FOCUS buy.PASS Bao 'Rasoa doesn't know what was bought by Bao'

I assume that such wh-questions, both matrix and embedded, have the structure in (11). The wh-phrase is in the specifier of CP, the focus particle *no* occupies C°, and there is a trace of the wh-phrase in the subject position of the IP complement to C°.<sup>6</sup>

(11) (verb hoe)  $\begin{bmatrix} CP & wh-phrase \end{bmatrix} \begin{bmatrix} CP & vh-phrase \end{bmatrix} \begin{bmatrix} CP & vh-phra$ 

# 2.3 Sluicing

With this much as background, we can turn to sluicing. I follow Ross 1969 and Merchant 2001 in taking sluicing to be IP deletion which reduces an interrogative clause to only a wh-phrase, (12a).<sup>7</sup> (12b) is the corresponding derivation. I will refer to the missing material as the SLUICED CLAUSE and indicate it by strikethrough below. The XP corresponding to the wh-phrase is the CORRELATE (*somebody* in (12)) and the clause containing the correlate will be referred to as the ANTECEDENT CLAUSE (*somebody left* in (12)).

- (12) a. Somebody left and you know who
  - b. Somebody left and you know  $[_{CP}$  who  $[_{C}, C^{\circ}[wh] [_{IP} \text{ left} ]]]$

Two examples of Malagasy sluicing are given in (13).

<sup>&</sup>lt;sup>6</sup> Paul 2001 analyzes wh-questions and the focus construction with *no* as pseudoclefts:

<sup>(</sup>i) [[predicate *wh/focus-XP*] [headless relative clause no CP]]

I believe that the point being made in this paper is unaffected if the pseudocleft analysis is adopted as long as the "sluicing" construction still involves ellipsis. What would change is that "sluicing" in Malagasy would be a kind of subject/topic drop of the pseudocleft subject rather than IP ellipsis. I leave this issue for future investigation. See MacLaughlin 1995, Pensalfini 1995, and Sabel 2002 for the structure of wh-questions assumed here.

<sup>&</sup>lt;sup>7</sup> The most widely accepted alternative is that the ellipsis site contains an empty category whose content is recovered at LF via replacement with syntactic structure from an appropriate linguistic antecedent (Chao 1988, Chung, Ladusaw, and McCloskey 1995, Lobeck 1995). The argument in favor of semantic isomorphism in section 4 does not depend upon a deletion versus empty category syntax.

- (13) a. nandoko zavatra i Bao fa manadino aho hoe inona paint.ACT thing Bao but forget.ACT 1SG.NOM HOE what 'Bao painted something but I forget what'
  - b. nisy olona nihomehy ka nanontany ianao hoe iza exist.ACT person laughed and ask.ACT 2SG.NOM HOE who 'There was someone who laughed and you asked who'

Given the syntactic restrictions repeated in (14), we can conclude two things about sluicing structures in Malagasy.

- (14) *Malagasy syntactic restrictions* 
  - a. subjects must be specific
  - b. only subjects undergo Abar-movement

First, the subject specificity requirement guarantees that indefinite correlates in the antecedent clause will be impossible in subject position, (15), because they violate the subject specificity requirement. Indefinite correlates must be in non-subject position as in (13). That is why (13b) in particular uses an existential.

(15) \*nihomehy olona ka nanontany ianao hoe iza laugh.ACT person and ask.ACT 2SG.NOM HOE who ('Someone laughed and you asked who')

Second, the subject extraction restriction requires that the wh-phrase be a subject in the sluiced clause. This follows because sluicing is derived by wh-movement and only subjects undergo wh-movement. As a consequence, the sluicing examples in (13) cannot have the pre-deletion sources in (16) in which the wh-phrase moves from a non-subject position.

inadequate pre-deletion sources for Malagasy sluicing

(16) a. \*nandoko zavatra i Bao fa paint.ACT thing Bao but manadino aho hoe inona no nandoko t<sub>what</sub> i Bao forget.ACT 1SG.NOM HOE what FOCUS paint.ACT Bao ('Bao painted something but I don't know what Bao painted') b. \*nisy olona nihomehy ka exist.ACT person laughed and twho nihomehy nanontany ianao hoe iza no nisy ask.ACT 2SG.NOM HOE who FOCUS exist.ACT laughed ('There was someone who laughed and you asked who there was who laughed')

This claim is not obviously correct because we cannot see the syntactic structure of the sluiced material, specifically, the origin site of the wh-phrase in (13). Nevertheless, I will return in section 4 to argue that there are independent reasons to believe that these are not the right pre-deletion structures. Instead, the correct syntactic sources, prior to deletion, are as in (17).

adequate pre-deletion sources for Malagasy sluicing nandoko zavatra i Bao fa (17) a. paint.ACT thing Bao but hoe inona (no nolokoin' i Bao t<sub>what</sub>) manadino aho forget.ACT 1SG.NOM HOE what FOCUS paint.PASS Bao 'Bao painted something but I forget what (was painted by Bao)' b. olona nihomehy ka nisy laughed exist.ACT person and nanontany ianao hoe iza (no nihomehy t<sub>who</sub>) who FOCUS laugh.ACT ask.ACT 2SG.NOM HOE 'There was someone who laughed and so you asked who (laughed)'

These examples obey both syntactic restrictions in (14) and are fully grammatical, even without sluicing.<sup>8</sup> Assuming the correctness of the pre-deletion structures in (17), the following section explores the consequences for the form of the Recoverability condition on ellipsis.

# 3 Identity in Ellipsis: In Favor of Semantic Isomorphism

Linguistic material cannot be freely unpronounced in structures, rather, ellipsis is licensed by recoverability: a constituent E may be elided only if its content is recoverable from the surrounding linguistic context through an antecedent A. The exact formulation of this identification condition and what information in the antecedent A is relevant is a matter of much debate, however. One can identify two broad approaches to recoverability: syntactic versus semantic. I develop generic versions of these two approaches in sections 3.1 and 3.2 before giving the argument against a syntactic approach in section 3.3.

# 3.1 Syntactic Isomorphism

(i)

Under a *syntactic isomorphism* approach to recoverability, it is the morphosyntactic form of the antecedent that is relevant for licensing ellipsis. There must be a structural relationship between E and A, typically one of identity. Such an approach is found in Rooth 1992, Fiengo and May 1994, Chung, Ladusaw, and McCloskey 1995, and Romero 1998 among others. I formulate a concrete proposal in (18).

(18) LF structural condition on IP ellipsis
 An IP E can be deleted only if E is morphosyntactically identical to an antecedent IP A at LF

<sup>&</sup>lt;sup>8</sup> If sluicing is IP ellipsis, the fact that the focus particle *no* in C° is not possible in such examples and must be deleted is unexpected. Nevertheless, it is fully consistent with Merchant's (2001:62) observation in (i) and I will not explore the issue.

Consider how the approach works for the basic case in (19a).

- (19) a. Somebody ate the cake. I wonder who.
  - b.
  - antecedent clause: [ $_A x$  ate the cake] sluiced clause: I wonder [ $_{CP}$  who<sub>x</sub> [ $_E x$  ate the cake ]] c.

The structure of the antecedent clause at LF is (19b). I assume that an indefinite correlate translates as a free variable x at LF (Heim 1982). Such variables will be bound by textlevel existential closure or by some other operator. The structure of the sluiced clause is (19c) with the trace of Abar-movement also represented as a variable. Since the two clauses are structurally identical, sluicing can succeed, as desired. For further details, see the discussion of Merger in Chung, Ladusaw, and McCloskey 1995.

#### 3.2 **Semantic Isomorphism**

Under a *semantic isomorphism* approach, the relevant information in the antecedent is semantic and there must be a certain semantic relationship between E and A. Semantic approaches to ellipsis are represented by Dalrymple, Shieber, and Pereira 1991, Hardt 1999, Prüst, van den Berg, and Scha 1994, Asher, Hardt, and Busquets 1997, and most recently Merchant 2001 for sluicing. Merchant's sluicing condition is given in (20), with e-GIVENness defined in (21) and (22).

- (20)*Focus condition on IP ellipsis* (Merchant 2001:31) an IP E can be deleted only if E is e-GIVEN
- (21)e-GIVENness (Merchant 2001:31) An expression E counts as e-GIVEN iff E has a salient antecedent A and, modulo  $\exists$ -type shifting,<sup>9</sup>
  - A entails F-closure(E), and i.
  - ii. E entails F-closure(A)
- F-closure(X) is the result of replacing focus-marked parts of X with  $\exists$ -bound (22)variables of the appropriate type

Since none of the examples under consideration involves focused material, I offer the simplified version of Merchant's analysis in (23), which will suffice for my purposes.

Simplified semantic condition on IP ellipsis (23)IP E can be deleted only if there is a salient antecedent IP A such that A and E entail each other

<sup>&</sup>lt;sup>9</sup> " $\exists$ -type shifting is a type-shifting operation that raises expressions to type  $\langle t \rangle$  and existentially binds unfilled arguments" (Merchant 2001:14).

Consider how this works for the basic case repeated in (24a).

- (24) a. Somebody ate the cake. I wonder who.
  - b. antecedent clause:  $[|A|] = \exists x.eat(x, the cake)$
  - c. sluiced clause:  $[| E |] = \exists x.eat(x, the cake)$

The semantic representations of the antecedent IP A and the elided IP E are (24a,b), respectively. Since the two representations are identical and therefore entail each other, sluicing succeeds. Observe that there is no structural identity requirement under the semantic isomorphism approach. The elided material has syntactic structure but this structure does not play directly into the ellipsis condition.

# 3.3 Isomorphism and Malagasy Sluicing

This section demonstrates that the grammatical examples of sluicing in Malagasy are compatible only with a semantic isomorphism approach to ellipsis identification. To see this, we will consider each of the Malagasy sluicing examples in (13) in turn. (25) is (13a).

(25) nandoko zavatra i Bao fa paint.ACT thing Bao but manadino aho hoe inona no nolokoin' i Bao t<sub>what</sub> forget.ACT 1SG.NOM HOE what FOCUS paint.PASS Bao 'Bao painted something but I forget what'

The LF syntactic structure of (25) is (26). In the antecedent clause,  $IP_A$ , the indefinite correlate has been replaced by a free variable in accordance with my Heimian treatment of indefinites above. In the sluiced clause,  $IP_E$ , the Abar trace of the wh-phrase is also represented by a variable.



We can ask whether either theory of ellipsis identity allows  $IP_E$  to elide as desired. That is, is  $IP_A$  syntactically and/or semantically isomorphic to  $IP_E$ ? It seems straightforward to observe that there is no syntactic isomorphism.  $IP_A$  and  $IP_E$  are not structurally the same,

the reason being that  $IP_A$  is an active structure while  $IP_E$  is a passive structure. Spec,  $IP_A$  contains the agent DP *Bao* but spec,  $IP_E$  contains a variable corresponding to the extracted wh-phrase *what*. On the other hand, there is semantic isomorphism. At the relevant level of semantic representation, corresponding active and passive sentences have the same denotation:  $[|IP_A|] = [|IP_E|] = \exists x.paint(Bao,x)$ . Clearly the simplified semantic condition on ellipsis in (23) is satisfied since there is mutual entailment between A and E. (13b), repeated as (27), makes the same point in a different way.

(27)nisy olona nihomehy ka exist.ACT person laughed and nanontany ianao hoe iza nihomehy no -t<sub>who</sub> ask.ACT 2SG.NOM HOE who FOCUS laugh.ACT 'There was someone who laughed and so you asked who'

The antecedent has the structure of an existential sentence, possibly with a null expletive in subject position (see Polinsky 1994, Pearson 1996, and Paul 2000b on the structure of Malagasy existentials) but the sluiced clause is an active sentence with a variable corresponding to the wh-phrase in subject position, (28). There is thus no syntactic isomorphism and we incorrectly expect sluicing to fail under a syntactic isomorphism approach.



In contrast, there is semantic isomorphism since both IPs have the denotation,  $\exists x.laugh(x)$ . Semantic isomorphism correctly predicts that sluicing will be possible.

The point is fully general, regardless of the specific Malagasy examples. The variable associated with the wh-phrase in a sluiced clause must be in subject position because only subjects undergo wh-movement. At the same time, the variable associated with an indefinite correlate in an antecedent clause must be in non-subject position because subjects must be specific. Since the two variables are in distinct structural positions, there will never be syntactic identity between the antecedent clause and the sluiced clause. Syntactic isomorphism thus wrongly predicts the sluice to be ungrammatical, contrary to fact. Semantic isomorphism correctly allows the sluice if the appropriate semantic relation holds. Malagasy thus provides an argument in favor of

semantic isomorphism over syntactic isomorphism as the resolution strategy for ellipsis.<sup>10</sup>

# 4 An Alternative Analysis Maintaining Syntactic Isomorphism

# 4.1 A PF Deletion Rescue Analysis

In this section I more carefully explore an analysis that maintains syntactic isomorphism before concluding that it is inadequate for Malagasy sluicing. I develop an analysis which would license the ungrammatical pre-deletion sluicing sources in (16), in which there was syntactic isomorphism but violations of the subject extraction restriction. I then show that there are additional reasons, unrelated to the subject extraction restriction, to reject the analysis.

The alternative analysis is based on the observation, originating in Ross 1969, that wh-movement in sluicing apparently violates well-known conditions on movement. It is insensitive to a wide range of islands whose effects are typically captured via Subjacency or the ECP. Representative examples are given below, taken from more extensive discussions in Merchant 2001:86-89 and Chung, Ladusaw, and McCloskey 1995:272-277. Observe that these examples are ungrammatical without sluicing.

### (29) a. *complex noun phrase constraint*

They want to hire someone who speaks a Balkan language, but I don't remember which they want to hire someone who speaks.

- b. *wh-island* Sandy was trying to work out which students would be able to solve a certain problem, but she wouldn't tell us which one she was trying to work out which students would be able to solve.
- c. *COMP-trace effect* It has been determined that someone will be appointed, but I can't remember who it has been determined that will be appointed.

From similar observations Ross concluded that the sluicing deletion could repair island violations, with syntactic violations calculated globally across the derivation. If they do not exist after deletion, the structure is allowed. While Ross's position is not tenable (see Merchant 2001 and references therein), we might assume that there are syntactic principles operating at Phonological Form (PF) and deletion of the offending structure is capable of rescuing derivations from violating those PF conditions. Such proposals do exist in the literature. Kennedy and Merchant 2000 and Merchant 2001:163-183 argue that some instances of the Left Branch Condition are such a PF effect. De Chene 1995

<sup>&</sup>lt;sup>10</sup> Merchant 2001:34-35 raises the issue of why similar voice mismatches between antecedent and sluiced clauses are not allowed in English sluicing:

<sup>(</sup>i) \*Someone shot Ben but I don't know by who(m) Ben was shot

This is unexpected under Merchant's theory. Since Malagasy behaves as predicted by the theory, I leave this issue for future investigation.

and Merchant 2001:183-185 contain discussion and references concerning the PF nature of COMP-trace effects. Lasnik 1999 proposes that deletion at PF, sluicing in particular, can rescue derivations with unchecked morphosyntactic features. Most recently, Merchant, to appear argues that PF deletion ameliorates island violations because it deletes certain intermediate traces that would otherise be illicit at PF.<sup>11</sup> If, as seems increasingly likely, deletion is in principle capable of saving syntactically ill-formed derivations in some cases, then an alternative hypothesis concerning sluicing in Malagasy is that the sluicing derivation involves syntactic isomorphism but movement from a non-subject position. The subject extraction restriction can be violated just in case the material containing the offending trace of movement is deleted by PF. I'll call this the Deletion Rescue Analysis:

(30) *Deletion Rescue Analysis* syntactic isomorphism with PF deletion (i.e. sluicing) 'calling off' violations of the subject extraction restriction

Returning to the examples at hand, the deletion rescue analysis claims that the derivation for Malagasy sluicing examples is as in (31), in which there is syntactic isomorphism but extraction of a non-subject in violation of the subject extraction restriction. The PF deletion of the struckthrough material permits the otherwise illicit movement. Remember that such examples are ungrammatical without deletion, (16).

Deletion Rescue Analysis of Malagasy sluicing

(31)	a.	nandoko	zavatra	i Bao	fa			
		paint.ACT	thing	Bao	but			
		manadino	aho	hoe	inona	no	nandoko	-t <sub>what</sub> i-Bao
		forget.ACT	1SG.NOM	A HOE	what	FOCUS	paint.ACT	Bao
		'Bao paint	ed somet	hing bu	t I don't	know wha	ıt.'	
	b.	nisy	olona	nihom	ehy ka			
		exist.ACT	person	laughe	d and			
		nanontany	ianao	hoe	iza <del>ne</del>	nisy	t <sub>who</sub>	nihomehy
		ask.ACT	2SG.NOM	A HOE	who FC	OCUS exist	.ACT	laughed
		'There was	s someon	e who la	aughed a	nd you as	ked who.'	

Regardless of the specifics of how PF deletion might repair the otherwise disallowed movement, the next subsection presents evidence against the deletion rescue analysis and the derivations in (31).

### 4.2 Against Structural Isomorphism Derivations

### **4.2.1** Theoretical Considerations

As an initial consideration, there are reasons to doubt the underlying premise of the deletion rescue analysis, that the principle accounting for the Malagasy subject extraction

<sup>&</sup>lt;sup>11</sup> Merchant 2001 argues that examples such as those in (29) are only apparent island violations. The deleted structures do not actually contain islands.

restriction repeated in (32) is a PF one and its effects can be voided by deletion prior to PF.

(32) *Malagasy subject extraction restriction* only subjects undergo Abar-movement

While there are numerous analyses of the Malagasy subject extraction restriction, none to my knowledge invokes principles that plausibly hold only at PF. Keenan and Comrie 1977 attributes the restriction to an extraction accessibility hierarchy. MacLaughlin 1995 and Paul 2002 offer accounts of the restriction appealing to (some form of) Relativized Minimality. MacLaughlin 1995 accounts for the restriction by placing the clause-final subject in an Abar topic position and invoking Relativized Minimality to prevent another non-subject Abar movement from crossing this Abar topic position. Only the subject can undergo further Abar movement. Paul 2002, working with a Minimalist framework, proposes that Malagasy does not have a derived A-position for objects in vP. As a result, no non-subject, VP-internal phrase can extract over the vP-internal subject position without violating Relativized Minimality. Sabel 2002 attributes the restriction to Subjacency violations along with the assumption that any argument in Malagasy can be merged in the complement position. Finally, Pearson 2001 proposes that the clause-final XP is not a subject but a topic which occupies the same position that an extracted phrase would target. Regardless of the specifics of these analyses, none appeals to a principle that is PF-based and, while the non-existence of an account of (32) appealing to a PF principle does not exclude one, it is at least a concern. The next two subsections explore two substantive, empirical arguments against the deletion rescue analysis.

# 4.2.2 Case Matching Effects

The first argument against a syntactically isomorphic derivation for Malagasy sluicing examples comes from case matching effects. If the sluicing derivations obey syntactic isomorphism, we expect matching between the case of the correlate and that of the wh-phrase since they are in structurally identical case positions. This does not occur, as I will show.

Malagasy makes an overt distinction between nominative and accusative case in some of its nominals: names, pronouns, and the wh-phrase *iza* 'who'. Other nominals do not take accusative marking. For *who*, the nominative form is *iza* 'who.NOM' and the accusative form is *an'iza* 'who.ACC':

(33) a. mijery \*iza/an'iza ianao? see.ACT who.NOM/who.ACC 2SG.NOM 'Who are you looking at?'
b. iza/\*an'iza no mijery anao<sup>12</sup> who.NOM/who.ACC FOCUS see.ACT 2SG.ACC 'Who is looking at you?'

<sup>&</sup>lt;sup>12</sup> A minimal pair with (33a) cannot be formed because wh-in-situ with subjects is not permitted.

In sluicing examples the deletion rescue analysis predicts that the wh-phrase will show the case appropriate for the trace position and, given that there is syntactic isomorphism, it will match the case of the correlate. This is incorrect. The wh-phrase always shows up in the nominative, the case appropriate for a subject, regardless of the case of the correlate—even when the correlate is a direct object, (34).

(34)\*mijery olona i Bao fa look.ACT person Bao but tsy fantatro hoe an'iza i Bao mijery -t<sub>whom</sub>-<del>no</del>-NEG know.1SG HOE who.ACC FOCUS look.ACT Bao ('Bao is looking at someone but I don't know whom')

There are thus no case matching effects in Malagasy. The correct derivation has a nominative wh-phrase and no case matching, but also no syntactic isomorphism:

(35) mijery olona i Bao fa look.ACT person Bao but tsy fantatro hoe iza no jeren' i Bao t<sub>who</sub> NEG know.1SG HOE who.NOM FOCUS look.PASS Bao 'Bao is looking at someone but I don't know who.'

### 4.2.3 **Preposition Stranding**

The deletion rescue analysis also does not account for certain apparent preposition ( $P^{\circ}$ ) stranding facts. If sluicing derivations involve syntactic isomorphism, then Malagasy must allow  $P^{\circ}$  stranding in wh-questions. This follows from Merchant's (2001:92) generalization in (36).

(36) Preposition Stranding Generalization (Merchant 2001)
 A language L will allow preposition stranding under sluicing iff L allows preposition stranding under regular wh-movement

Such a pattern is expected if sluicing is derived by wh-movement followed by deletion, following Ross and Merchant. If  $P^{\circ}$  stranding is not allowed overtly, it is not allowed if one deletes the clause containing the stranded preposition. In other words, the generalization indicates that sluicing does not exceptionally license  $P^{\circ}$  stranding. Whatever principle is violated in illicit  $P^{\circ}$  stranding in wh-questions, it is not a PF principle.

Returning to Malagasy, that language does not allow  $P^\circ$  stranding under whmovement:

(37)	a.	toerana tsara hiafenana ao amban' ny latabatra place good hide.CIRC there under the table							
		'Under the table is a good place to hide'							
	b.	*inona no	toerana	tsara hi	iafenana	ao ambany	/?		
		what FOCUS	place	good hi	ide.CIRC	there under			
		('*What is under a good place to hide?')							
(38)	a.	a. mitoetra amin' ilay trano i Rasoa							
		live.ACT in	that ho	ouse Rasoa	a				
		'Rasoa lives in that house'							
	b.	*inona ny trano	no	mitoetra	amina	i Rasoa?			
		what the house	e FOCUS	live.ACT	in	Rasoa			
		('Which house does Rasoa live in?')							

Given (36), Malagasy will also not permit  $P^{\circ}$  stranding in sluicing. Nevertheless, there are sluicing examples that seem to require precisely that, (39). Observe the grammaticality of the translations in English, a language that allows  $P^{\circ}$  stranding. The examples are shown with the illicit deletion rescue analysis derivations which would require  $P^{\circ}$  stranding.

(39)	a.	mitoetra amin' ny trano i Rasoa fa adinoko hoe
		live.ACT in the house Rasoa but forget.1SG HOE
		inona ilay trano <del>no mitoetra amin' t<sub>which house</sub> i Rasoa</del>
		what that house FOCUS live.ACT in' Rasoa
		'Rasoa lives in a house but I forget which house'
	b.	hanao izany i Rasoa noho ilay olona fa tsy niteny <sup>13</sup>
		do.ACT that Rasoa because.of that person but NEG say
		aho hoe iza <del>no hanao izany i Rasoa noho t<sub>who</sub></del>
		1SG HOE who FOCUS do.ACT that Rasoa because.of
		'Rasoa will do that because of someone but I didn't say who'

Thus, if syntactic isomorphism is enforced for Malagasy sluicing, Malagasy would be a counterexample to Merchant's syntactically motivated generalization in (36). Assuming (36) is correct, there is actually no P° stranding in the above examples. The correct derivations are in (40) with no P° stranding but also no syntactic isomorphism. The circumstantial voice (indirect passive) is used to promote the prepositional object to subject position prior to wh-questioning. The examples are grammatical even without sluicing.

 $<sup>^{13}</sup>$  The adjunct *noho izaho* 'because of me' must follow the subject. This position is generally available for adverbials.

(40) a. mitoetra amin' nv trano i Rasoa fa adinoko hoe live.ACT in' the house Rasoa but forget.1SG HOE inona ilay trano (no itoeran' i Rasoa t<sub>which house</sub>) what that house FOCUS live.CIRC Rasoa 'Rasoa lives in a house but I forget which house (is lived in by Rasoa)' b. hanao izany i Rasoa noho ilay olona fa tsy niteny do.ACT that because.of that person but Rasoa NEG say aho hoe iza (no hanaovan' i Rasoa izany t<sub>who</sub>) 1SG HOE who FOCUS do.CIRC Rasoa that 'Rasoa will do that because of someone but I didn't say who (that will be done by Rasoa because of)'

To summarize this section, theoretical considerations as well as empirical facts concerning case matching and preposition stranding argue against the deletion rescue analysis which maintains syntactic isomorphism. Instead, all the data are straightforwardly accounted for by giving up on syntactic isomorphism and adopting semantic isomorphism.

# 5 Conclusion

In summary, I have attempted to show that Malagasy-specific syntactic restrictions disallow sluicing derivations in which the sluiced clause is syntactically isomorphic to the antecedent clause. Nonetheless sluicing succeeds. Malagasy thus provides evidence against a syntactically-based recoverability condition on ellipsis—in sluicing at least. Semantic isomorphism in contrast is superior in permitting sluicing in Malagasy since it does not require syntactic parallelism between the antecedent clause and the sluiced clause.

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